

- Stopping Sight Distance Calculations

## Stopping Sight Distance

Westerly Site Driveway - Average Travel Speed

|             |    | SPEED<br>(MPH) | BRAKE<br>REACTION<br>DISTANCE<br>(FT) | BRAKING DISTANCE<br>(FT) | CALCULATED STOPPING<br>SIGHT DISTANCE<br>(FT) |
|-------------|----|----------------|---------------------------------------|--------------------------|---|
| Direction 1 | EB | 44             | 161.7                                 | 175.4                    | 337.1   |
| Direction 2 | WB | 44             | 161.7                                 | 191.0                    | 352.7   |

### INPUTS

#### Direction 1

#### Direction 2

Travel Direction

EB

WB

Speed

44

44

Grade

0.02

-0.01

t

2.5

2.5

a

11.2

11.2

### **Stopping Sight Distance (SSD) - Source: AASHTO**

SSD = Reaction Distance + Brake Distance

Reaction Distance =  $1.47 \times t \times V$

Brake Distance =  $V^2 / (30 \times ((a/32.2) + G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec<sup>2</sup>)

## Stopping Sight Distance

Easterly Site Drive - Average Travel Speed

|             |    | SPEED<br>(MPH) | BRAKE<br>REACTION<br>DISTANCE<br>(FT) | BRAKING DISTANCE<br>(FT) | CALCULATED STOPPING<br>SIGHT DISTANCE<br>(FT) |
|-------------|----|----------------|---------------------------------------|--------------------------|---|
| Direction 1 | EB | 44             | 161.7                                 | 185.5                    | 347.2   |
| Direction 2 | WB | 44             | 161.7                                 | 196.9                    | 358.6   |

### INPUTS

### Direction 1

### Direction 2

Travel Direction

EB

WB

Speed

44

44

Grade

0

-0.02

t

2.5

2.5

a

11.2

11.2

### **Stopping Sight Distance (SSD) - Source: AASHTO**

SSD = Reaction Distance + Brake Distance

Reaction Distance =  $1.47 \times t \times V$

Brake Distance =  $V^2 / (30 \times ((a/32.2) + G))$

Where:

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V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec<sup>2</sup>)

## Stopping Sight Distance

Westerly Site Drive - 85th Percentile Travel Speed

|             |    | SPEED<br>(MPH) | BRAKE<br>REACTION<br>DISTANCE<br>(FT) | BRAKING DISTANCE<br>(FT) | CALCULATED STOPPING<br>SIGHT DISTANCE<br>(FT) |
|-------------|----|----------------|---------------------------------------|--------------------------|---|
| Direction 1 | EB | 47             | 172.725                               | 200.2                    | 372.9   |
| Direction 2 | WB | 50             | 183.75                                | 246.7                    | 430.4   |

### INPUTS

### Direction 1

### Direction 2

Travel Direction

EB

WB

Speed

47

50

Grade

0.02

-0.01

t

2.5

2.5

a

11.2

11.2

### **Stopping Sight Distance (SSD) - Source: AASHTO**

SSD = Reaction Distance + Brake Distance

Reaction Distance =  $1.47 \times t \times V$

Brake Distance =  $V^2 / (30 \times ((a/32.2) + G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec<sup>2</sup>)

## Stopping Sight Distance

Easterly Site Drive - 85th Percentile Travel Speed

|             |    | SPEED<br>(MPH) | BRAKE<br>REACTION<br>DISTANCE<br>(FT) | BRAKING DISTANCE<br>(FT) | CALCULATED STOPPING<br>SIGHT DISTANCE<br>(FT) |
|-------------|----|----------------|---------------------------------------|--------------------------|---|
| Direction 1 | EB | 47             | 172.725                               | 211.7                    | 384.4   |
| Direction 2 | WB | 50             | 183.75                                | 254.2                    | 437.9   |

### INPUTS

### Direction 1

### Direction 2

Travel Direction

EB

WB

Speed

47

50

Grade

0

-0.02

t

2.5

2.5

a

11.2

11.2

### **Stopping Sight Distance (SSD) - Source: AASHTO**

SSD = Reaction Distance + Brake Distance

Reaction Distance =  $1.47 \times t \times V$

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Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec<sup>2</sup>)